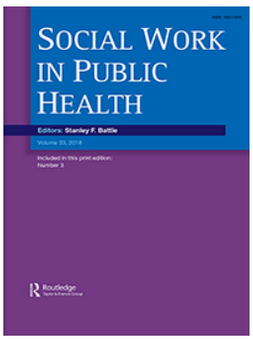

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Training in Evidence-Based Practices Increases Likelihood to Integrate Different HIV Prevention Services with Substance-Using Clients

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ABSTRACT

Providers of social and public health services ("providers") often use HIV prevention strategies with substance-using clients to decrease HIV transmission and infection. This article examines factors that facilitate providers' use of select HIV-prevention strategies. Sample comprises 379 providers from 36 agencies in New York City. Outcomes: sexual risk assessments; risk reduction counseling; condom demonstration; and referrals to HIV testing. Predictors: training; job satisfaction; staff collaboration. The authors used multilevel logistic regression and linear multilevel models. HIV prevention training was associated with increased performance of each outcome. The odds of conducting several outcomes were higher for providers trained in evidence-based interventions. Staff collaboration and job satisfaction were associated with provision of multiple outcomes. This study shows training and collaboration/satisfaction as significantly influencing providers to use prevention strategies. Providers ought to be trained in multiple modalities, and agencies ought to prioritize collaborative environments that promote job satisfaction.

KEYWORDS

HIV prevention strategies; substance misuse; provider training; service integration

Despite tremendous advances in treatment and prevention, HIV continues to present a serious public health threat in the United States. Although HIV medications may suppress the virus substantially, and though individuals who are infected may enjoy greater longevity, one's quality of life with HIV is severely compromised by medication side effects, by stigma, and by premature mortality (Guaraldi et al., 2011; Hawkins, 2010; Mahajan et al., 2008). Although there were significant reductions in new HIV infections globally from 2009 to 2013, incidences remain disproportionately high for persons who use alcohol and/or drugs. In the United States, more than 2.6 million American adults receive substance use treatment in community-based programs each year (Center for Behavioral Health Statistics and Quality, 2015). Substance users are at heightened risk for HIV infection through sexual contact (i.e., unprotected sex, exchange sex, sex while under the influence of drugs/alcohol), and, less often, needle-sharing practices (Des Jarlais & Semann, 2008; Ramirez-Valles, Garcia, Campbell, Diaz, & Heckathorn, 2008; Shannon et al., 2009). Providers of social and public health services (e.g., social workers, nurses, health educators, etc.) have an opportunity and an ethical obligation to offer HIV prevention to individuals at risk, including substance-using clients (Beyrer et al., 2010), a priority practice recommended by federal and state agencies (U.S. Department of Health and Human Services, 2010; Volkow & Montaner, 2011).

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HIV prevention strategies, known to reduce HIV infection and transmission, have not been offered consistently or systematically (Kurth, Celum, Baeten, Vermund, & Wasserheit, 2011; Semaan et al., 2002). Some service agencies may offer discrete HIV prevention services, such as testing or the Centers for Disease Control and Prevention's (CDC) Diffusion of Effective Behavioral Interventions (EBIs), but practitioners' decisions to implement one or more such prevention strategies into their day-to-day practice has been haphazard and at their own discretion (Metzger, Woody, & O'Brien, 2010; Spector & Remien, 2015). Trained psychosocial and health providers can use, discretely or in combination, strategies known to reduce HIV risk behaviors (e.g., sex under the influence of alcohol/drugs) and/or to encourage HIV protective behaviors (e.g., using condoms). These strategies include sexual risk assessments, risk reduction counseling, condom use demonstrations, and referrals for HIV testing (Centers for Disease Control and Prevention, 2012; Choi et al., 2008; Coates, Richter, & Caceres, 2008; Tross et al., 2008). Offering multiple strategies or "combined HIV prevention interventions" has been shown to be the most effective way to prevent HIV transmission among those individuals at higher risk for infection, such as substance misusers (Hankins & De Zalduondo, 2010; Kurth, Celum, Baeten, Vermund, & Wasserheit, 2011). Service providers in community-based agencies are well positioned to offer several HIV prevention strategies along with the psychosocial and health services (e.g., substance use and mental health treatment) received by substance-using individuals.

Evidence-based HIV prevention can help clients avoid primary and secondary HIV infection by supporting their adoption of preventive behaviors. Regrettably, little is known about specific areas of provider training, which may help them facilitate the inclusion of multiple HIV prevention strategies in practice with substance-using clients. Recent research shows that, regardless of service setting, providers need to grasp the unique needs of HIV prevention and intervention for substance-using clients. Several key areas have been recommended for research and practice, including the need for including sexual risk assessment in ongoing care of substance-using clients, and for identifying training needs that might help providers to deliver effective services (Campbell, Tross, & Calsyn, 2013). We acknowledge that myriad factors, aside from training, may influence service provision. The ultimate goal of this study is to contribute to the development of educational training aimed at providers, and human services students and interns, working with substance-using clients. Therefore, the study aims to identify how specific types of professional experiences shape providers' use of multiple HIV prevention strategies with substance-using clients in day-to-day practice . We use data from 379 providers of social and public health services in 36 New York City community-based service agencies.

Although this study examines several variables, we used a linear multilevel model to assess the direct contribution of specific types of training on providers' provision of select HIV prevention strategies. However, we also ran models for each outcome, including agency-level predictors, indicating size (budgets) and capacity (number of staff).

Delivering multiple HIV prevention strategies

HIV prevention in the United States is routinely delivered in the form of behavioral counseling by medical providers (e.g., those in nursing and psychiatry) and by psychosocial providers (e.g., those in social work or psychology), as well as Credentialed Alcoholism and Substance Use Counselors. HIV prevention most often comprises discrete strategies—sexual risk assessment, risk-reduction counseling, male and/or female condom instructional demonstrations, and referral to HIV testing—or a combination of these strategies (Noar, 2008). Providers trained in these strategies are best able to link clients to HIV testing and primary care, key steps of the HIV Continuum of Care (Gardner et al., 2007; Gruber et al., 2011; Simbayi et al., 2004). Research shows that treatment for substance use disorder ought to include substantial HIV risk reduction (Stall, Paul, Barrett, Crosby, & Bein, 1999). However, to include HIV risk reduction, providers need to be knowledgeable about HIV transmission, symptoms of HIV, and preventive behaviors

(e.g., male and female condom use). Counseling about HIV testing, including referrals to testing sites, requires a basic understanding of the biomedical and ethical aspects of HIV testing (e.g., confidentiality and distinguishing types of tests), and the capacity to interpret and convey the results to clients (Bor, Miller, & Goldman, 2013).

Literature is lacking on factors that influence the inclusion of one or more HIV prevention strategies in practice. However, case studies and survey research in the past decade offer evidence linking personal and interpersonal factors to providers' use of multiple HIV prevention strategies. Research has shown that providers endorse Cognitive Behavioral Therapy (CBT) (Pinto, Spector, Yu, & Campbell, 2013), and that training in evidence-based practice encourages acceptance and adoption of other evidence-based behavioral practices (EBPs) (Rapp et al., 2007). Nonetheless, lack of training can be a barrier to providers' use of EBPs, such as Motivational Interviewing (MI), Harm Reduction (HR), or CBT (Hall, Amodeo, Shaffer, & Vander Bilt, 2000). For example, providers' endorsement of peer/team meetings is positively associated with the use of prevention strategies (Pinto, Wall, Yu, Penido, & Schmidt, 2012). Providers with favorable attitudes toward EBPs and a sense of satisfaction about their jobs appear more willing to use EBPs (Lavoie-Tremblay et al., 2008; R. M. Pinto, Yu, Spector, Gorroochurn, & McCarty, 2010). Research shows a moderate association exists between demographic variables and attitudes toward EBPs. In other words, female providers and older providers are more willing to use research based strategies than males providers and younger providers (Aarons & Sawitzky, 2006; R. M. Pinto et al., 2012).

Conceptual framework

Job characteristics theory suggests that service providers are influenced by their job roles and organizational norms (Oldham & Hackman, 2010). The theory posits that job characteristics reflect organizational structure and capacity in the form of social support providers may receive and offer one another, and which may help them work together and perform multiple tasks (e.g., use multiple HIV prevention strategies). Accordingly, it is assumed that providers' perceived job satisfaction will come from being able to perform their assigned roles, such as to offer HIV prevention strategies with potential to help clients reduce their risks for HIV infection and transmission. Adult learning theory suggests that providers can be best trained among colleagues with whom they feel safe and with whom there is potential for collaboration (Merriam, 2001). Cognitive-behavioral theory defines cognitive constructs that influence providers' inclusion of multiple services: knowledge/skills (training); and opinions/attitudes (job satisfaction), and social norms (staff collaboration) (Ajzen, 1991; Ajzen & Fishbein, 1980). This theory also suggest that providers' demographics may influence inclusion of multiple HIV prevention strategies (Perkins et al., 2007).

Method

Community-engaged research and study design

This study includes baseline data from a longitudinal study. The sample comprises 379 providers in 36 community-based agencies in New York City providing multiple services, including substance use and HIV prevention and treatment. We received approval from the Institutional Review Boards at our universities. We involved stakeholders through the Implementation Community Collaboration Board (ICCB) (Pinto, Spector, & Valera, 2011); we used group dynamics and iterative processes—power sharing, dialectic processes, mutual support; and problem solving—to incorporate life experiences and practice wisdom in all phases of the research cycle (Pinto, Spector, Rahman, & Gastolomendo, 2015).

Procedures

Recruitment of service providers

We recruited providers from 36 agencies funded by the NYC Department of Health and/or the CDC to provide substance use and HIV services, with the goal of enrolling at least 360 providers. We recruited from a list of over 100 agencies provided by the NYC Department of Health and the CDC. We contacted all agencies via email, and we followed up by phone. Study staff contacted agency representatives by phone, outlining procedures and staff inclusion criteria and developing a data collection plan. We approached agencies randomly and enrolled the first 36 that agreed to participate. Nine agencies were in Manhattan, eight in Brooklyn, four in Queens, three in the Bronx, and nine had sites in two or more boroughs. Each agency received a computer (valued at $1,000) as an incentive to participate and to use for linkage making. Providers received gift cards in the amount of $20 for the interview. Representatives from the 36 agencies that participated in the study were asked to announce the study to engage employees who, as part of their day-to-day work, provided substance use and HIV services. Providers were informed that participation in this study was voluntary. All providers who participated in the study were consented and enrolled. By design we sought to enroll different numbers of providers based on the size of their agencies. Therefore, the average number of participating staff per agency was 10 and the range two to 25.

Data collection

Agency representatives assisted in scheduling, and research staff implemented computer-assisted face-to-face interviews. We used password-protected survey software powered by DATSTAT Illume 6.0 on notebook computers. All data were kept in these computers, to which only relevant personnel had access. Data collectors reviewed our Consent Form with participants and asked them to sign it before the survey began. Provider interviews lasted 45–60 minutes.

Instrument

The survey comprised 150 questions capturing job description and demographic information, perception about one's job, and training in various evidence-based practices and service modalities. This survey was piloted with six stakeholder providers whose input was to modify the order in which questions were asked, and to ensure comprehension (questions worded at a ninth-grade level). The survey was repiloted with another six providers prior to baseline data collection.

Outcome measures: HIV prevention strategies

Each outcome was measured by a dichotomous (yes/no) question assessing if the provider offered that HIV prevention strategy, "Please tell us if you perform these activities with your substance using clients." Participants marked all activities that applied: (1) sexual risk assessments, (2) risk-reduction counseling, (3) male and/or female condom demonstration, and (4) HIV testing referrals. To assess multiple strategies, we created a composite, which was the count of the yes/no responses to the four strategies, values ranging from zero to four.

Predictors

Training

HIV Prevention Training: "Do you have training (curriculum-based training) in HIV prevention? (Yes/No).

EBP Training: Measured by a composite (Cronbach alpha = .76) based on the following survey question, "In which of the following have you received training?" Participants marked all EBPs that

applied: Motivational Interviewing (MI), Harm Reduction (HR), and Cognitive Behavioral Therapy (CBT).

Service modality training: Measured by a composite (Cronbach alpha = 0.70). Participants were asked, "In which of the following have you received training? Participants marked all modalities that applied: individual counseling, group therapy, and 12-Step programs.

Staff collaboration: "My colleagues and I work together in many different ways" (1 = *strongly disagree* to 6 = *strongly agree*).

Job satisfaction: "How satisfied are you with your job?" (1 = *strongly disagree* to 6 = *strongly agree*).

Control variables

Age was measured in years. Ethnicity included Latino/Hispanic or non-Latino/Hispanic. Race included White, African American, "More than one race," and a grouping of Asian, Native Hawaiian, Alaskan Native, and American Indian. Gender was categorized as male or female. Education included high school, associate's degrees, bachelor's degrees and master's degrees, and PhDs. Work positions included supervisor, counselor, case manager, navigator, educator, and administrator. Caseload was measured by average number of clients per week: "fewer than 30 clients," "31–50 clients," and "more than 50 clients."

Data analysis

All analyses were performed in SAS 9.4. We calculated descriptive proportions and Means (Standard Deviations) of provider characteristics, control variables, and outcomes.

For each dichotomous HIV prevention strategy, we used a multilevel logistic regression model (using SAS GLIMMIX) to test associations with provider's training (HIV prevention, EBP, and service modality), staff collaboration, and job satisfaction, while controlling for age, gender, race, work position, caseload, and clustering of providers within agency (through the inclusion of a random agency intercept). The combined strategies outcome (scored from 0 – 4) was modeled with a linear multilevel model. Odds ratios from the logistic regression were interpreted as the increased (or decreased) odds of a provider performing the particular HIV prevention strategy given the predictor variable, compared to a reference category. Beta coefficients from the linear regression were interpreted as the number of additional HIV prevention strategies that the provider performed given the predictor variable, compared to a reference category.

We additionally ran models for each outcome, including agency-level predictors, indicating size (budgets) and capacity (number of staff). Neither size or capacity was a significant predictor of any outcome, nor were other individual level predictor variables changed by their inclusion, hence these results are not presented.

Results

Sample characteristics

The sample of 379 providers (Table 1) came from 36 community-based service agencies. Twelve agencies had budgets above $10 million, 10 had budgets between $5 million and $10 million, another 10 between $1 million and $5 million, and four below $1 million. Eight agencies employed more than100 providers, four employed 50 to 100, and 24 employed fewer than 50. Sixty-two percent of providers were women. The sample included 138 (36%) providers who identified as Hispanic/Latino: 52 (38%) "more than one race," 48 (35%) White, 31 (22%) Black/African American, and 7 (5%) Native Hawaiian, Asian, American Indian or Alaskan Native. Not Hispanic/Latino providers identified as: 162 (67%) Black/African American; 54 (22%) White; 13 (6%) Hawaiian Native, Asian,

Table 1. Sample Demographic Characteristics (N = 379).

Characteristic	N	%
Age (M = 41, SD = 12)		
Gender		
Male	143	38
Female	236	62
Ethnicity		
Hispanic or Latino	241	64
Not Hispanic or Latino	138	36
Race		
More than one race	64	17
White	102	27
Black or African American	193	51
Native Hawaiian, Asian, American Indian, Alaskan Native	20	5
Highest level of education		
Less than high school	6	2
High school diploma/General Educational Decelopment	87	23
Associate's degree	46	12
Bachelor's degree	122	32
Master's degree	115	30
Doctoral degree	3	1
Work position		
Supervisor	56	15
Counselor	77	20
Case manager	100	26
Navigator	27	7
Educator/outreach	57	15
Program administrator	55	15
Other	7	2

American Indian, or Alaskan Native, and 12 (5%) "more than one race." The mean age was 41 years (SD = 12). Job positions included case managers (26%), counseling staff (e.g., social providers) 20%); education/outreach (15%), supervisors (e.g., of counselors, case managers, and/or outreach staff) (15%), program administrators (15%), health navigators (7%), and "other" (2%). Three providers had doctoral degrees and six had less than a high school education. The majority (32%) of providers had bachelor's degrees, followed by 30% with master's degrees, 23% with high school or General Educational Development diplomas, and 12% with associate's degrees.

Prevalence of HIV prevention strategies performed by providers with substance-using clients

The most common discretely performed strategy was risk reduction counseling at 66%, followed by HIV testing (64%), sexual risk assessments (62%), and condom demonstration (49%). We detected the use of multiple strategies with 58% of providers performing at least three of the four; but 22% performed none, 12% two strategies, and 8% performed only one.

Provider training

Sixty-one percent of providers reported training (curriculum-based) in HIV prevention. Thirty-six-percent were trained in all three EBPs (MI, HR, and CBT), 26% were trained in two, 16% in one, and 22% had no training in these EBPs. Sixteen percent of providers were trained in all three service modalities (counseling, group, and 12-Step); 15% in two modalities, 22% in one, and 47% were not trained.

Provider collaboration and satisfaction

The majority of providers reported high collaboration (86%) and job satisfaction (91%).

Associations of provider training with HIV prevention strategies with substance-using clients

HIV prevention training was associated with increased performance of all four types of prevention strategies with odds ratios (OR) ranging from 2.06 (95% confidence interval [CI] [1.21, –3.52]) for

condom demonstration to 4.06 (95% CI [2.30, 7.18]) for sexual risk assessment (Table 2). HIV prevention training was also associated with providers offering increased numbers of HIV prevention strategies (b = .70, SE = .14, p < .001).

Compared to providers without any EBP training, being trained in one, two, or three EBPs was associated with higher odds of providers performing all four discrete strategies—sexual risk assessment, risk reduction counseling, condom demonstration, and HIV testing referrals. Likewise, being trained in one, two, or three EBPs was associated with increased combinations of two or more strategies.

Staff collaboration was associated with more likely use of the four HIV prevention strategies, with similar odds ratios ranging from 1.31 (95% CI [1.03, 1.68]) for condom demonstration to 1.50 (95% CI [1.15, 1.95]) for risk-reduction counseling. Staff collaboration was also associated with increased combinations of two or more strategies (b = .23, SE= .06, p < .001). Job satisfaction was associated with increased combinations of two or more strategies but did not reach a significant association with any discrete strategy.

After controlling for all other provider experiences and training predictors, we detected that, as provider age increases by one year, the total number of strategies they use decreases on average by 0.02 (SE = .01), and that providers compared to male providers, females use 0.32 (SE = .14) fewer strategies. Race, education, job position, and caseload were not significantly associated with performing any strategies (data not shown).

Discussion

Although research exists on the effectiveness of various training techniques (e.g., train the trainer vs. workshop vs. written materials) (Herschell, Kolko, Baumann, & Davis, 2010) and on the effectiveness of training in specific HIV prevention interventions for health care providers (Burr, Storm, & Gross, 2006; Hiner et al., 2009), there are no studies that examine the impact of HIV prevention, MI, HR, and CBT trainings specifically upon social and public health service providers nor on their use of

Table 2. Providers Experience and Training Predicting[a] Inclusion of HIV prevention Strategies (**N** = 379).

Strategy Outcomes Predictors	Sexual Risk Assessment (Y/N) OR (95% CI)	Risk Reduction Counseling (Y/N) OR (95% CI)	Condom Demos (Y/N) OR (95% CI)	HIV Testing (Y/N) OR (95% CI)	Combined Strategies (0–4) *b* (*SE*)
HIV prevention training (ref: no HIV prevention training)	4.06*** [2.30, 7.18]	2.40** [1.35, 4.25]	2.06** [1.21, 3.52]	2.69*** [1.55, 4.66]	0.70 (0.14)***
EBP training (ref: no EBP training)					
1 area	3.73** [1.49, 9.34]	2.00 [0.80, 5.01]	3.22* [1.28, 8.07]	2.16 [0.90, 5.21]	0.77 (0.24)**
2 areas	2.75* [1.19, 6.34]	2.53* [1.07, 5.96]	2.05 [0.89, 4.75]	2.20 [0.97, 5.01]	0.64 (0.22)**
3 areas	8.18*** [2.83, 23.69]	5.77** [1.94, 17.20]	3.14* [1.17, 8.39]	3.51* [1.29, 9.57]	1.15 (0.26)***
Service modality training (ref: no service modality training)					
1 area	1.76 [0.86, 3.60]	1.88 [0.87, 4.06]	1.59 [0.80, 3.18]	1.34 [0.66, 2.75]	0.38 (0.18)*
2 areas	2.64* [1.02, 6.81]	2.06 [0.77, 5.52]	1.43 [0.61, 3.34]	1.58 [0.63, 3.92]	0.44 (0.23)
3 areas	2.29 [0.78, 6.75]	1.79 [0.59, 5.41]	1.35 [0.53, 3.45]	2.15 [0.74, 6.23]	0.43 (0.25)
Staff collaboration	1.40* [1.08, 1.81]	1.50** [1.15, 1.95]	1.31* [1.03, 1.68]	1.39* [1.08, 1.78]	0.23 (0.06)***
Job satisfaction	1.17 [0.89, 1.55]	1.18 [0.89, 1.56]	1.29 [0.99, 1.67]	1.28 [0.98, 1.67]	0.14 (0.07)*

Note. OR = odds ratio; CI = confidence interval; b = unstandardized beta estimate; SE = standard error; ref = reference; EBP = evidence-based practice.

a. multilevel logistic regression for each dichotomous outcome and linear regression for combined HIV strategies include all predictors simultaneously, as well as control variables: Age, gender, race, education, work position, and caseload.

*p < .05, **p < .01, ***p < .001;

HIV prevention strategies. We found that 78% of providers in these NYC community-based service agencies report using at least one HIV prevention strategy with their substance-using clients. This study identified provider training (in HIV prevention and in EBPs including MI, HR, and CBT) as strong predictors of higher use of HIV prevention strategies. In particular, there were unique associations between increased numbers of EBP training (one to three practices) and increased numbers of HIV prevention strategies included in practice suggesting a dose effect. Providers trained in three EBPs utilized on average 1.15 more HIV prevention strategies with their substance-using clients than those without EBP training. From our knowledge, this is the first study to show this effect, thus adding further evidence for training providers in multiple EBPs. Furthermore, this study shows robust associations between having been trained in cognitive behavioral treatment, and provider inclusion of multiple evidence-based HIV prevention strategies in practice with substance-using clients.

Our findings strengthen existing empirical support for training adult learners to use strategies with the potential to decrease HIV infection and transmission as they serve this vulnerable population. Future research will need to uncover the best pedagogy for combining different areas of knowledge and skills in the same training. It will be necessary, for example, to test the effectiveness of train-the-trainer, workshops, follow-up training, technical support, written, and/or online materials. Adult learning and cognitive behavioral theories suggesting that academic and workshop style training can help to build knowledge and self-efficacy and may thus optimize providers' capacities and willingness to include different HIV prevention strategies (Rotheram-Borus, Swendeman, & Chovnick, 2009), and newer online modules may help to sustain changes over time.

The EBPs and modalities explored in this article focus on building clients' resources for emotional, psychological, and physical wellness through the client–provider relationship as the primary tool of the service (Crits-Christoph, Connolly Gibbons, Hamilton, Ring-Kurtz, & Gallop, 2011; Moyers & Miller, 2013). Recovery approaches are strength based and recognize clients' capacities to address their own risk behaviors (Saleebey, 2012). HIV prevention counseling is similarly oriented, favoring a strength-based view of the client so that he or she may increase healthy practices, while reducing or eliminating risk taking. HIV prevention strategies require providers to pay special attention to the provider–client relationship, so that sensitive issues may be discussed candidly and protective behaviors may be supported (Spector & Pinto, 2011).

The inclusion of multiple HIV prevention strategies in practice requires rapport-building and "meeting clients where they are," avoiding confrontation and moving with instead of against client resistance (Resnicow & McMaster, 2012). These strategies also acknowledge clients' needs, values, and strengths and support their rights to be autonomous and to make their own decisions, while also working to develop healthy behaviors. Through individual and group counseling practices, providers discuss with clients how they may reduce the likelihood of HIV transmission, while affirming the need for intimate relationships, closeness, pleasure, and so on (Rutter, Estrada, Ferguson, & Diggs, 2008). It is within this context that we recommend that providers offer multiple HIV prevention strategies. Using multiple HIV prevention strategies offers providers broader ways (i.e., more "tools" in the "toolbox") to reach clients who vary in their preferences, needs, and engage in distinct behaviors.

Despite the fact that condoms are the best-known strategy for reducing sexual transmission of HIV, condom demonstration was the least performed strategy at 49% of the study's sample. We hypothesize that this strategy presents a challenge because it requires providers to have technical knowledge of how to use a condom, to be able to convey this knowledge comfortably and without embarrassment, which would require explicit discussions about sexual practices, and access to props. This suggests that more providers need to be trained in condom demonstration, and supported in their work places to have access to props and/or visual aids that would facilitate demonstrations

Staff collaboration and job satisfaction were associated with offering more strategies emphasizing the need for attention to organizational-level variables. Providers in settings where colleagues

routinely interact and collaborate may be encouraged to learn from one another through peer consultation, thus enhancing their skills in different HIV prevention strategies. Providers that have greater knowledge or training in HIV may share information with those who have had less exposure through case conferences, informal consultations, and sharing educational materials. Nonetheless, research is needed to discover what creates and sustains collaboration and job satisfaction within community-based service agencies. For example, future studies may include organizational factors in the promotion of providers' use of HIV prevention practices.

Our findings suggest that older providers are less likely to use HIV prevention strategies than younger ones (i.e., <40). Older providers, having been out of the academic environment for long periods of time, may have outdated HIV information and might be less comfortable talking to clients about their sexual practices. In contrast to the extant literature, we found that female providers in our sample seemed less likely than male providers to use HIV prevention strategies. More research is needed on gender and age dynamics and inclusion of HIV prevention strategies in practice. Qualitative studies might add rich detail to help us better understand these dynamics. It may be, for example, that providers are more comfortable addressing sexuality, sexual risk and pleasure with clients of their gender and around their ages (Drainoni, Dekker, Lee-Hood, Boehmer, & Relf, 2009; Kazukauskas & Lam, 2010).

Program evaluation of services is recommended to better assess the extent to which client outcomes are affected by providers' use of research-based interventions. Process evaluations may help inform the delivery of future interventions to train providers in educational settings and in the workplace. Outcome evaluations may help to determine which clients benefit most from different types of services across different settings. Funders ought to focus on supporting program evaluations as a key strategy of developing "real-world" knowledge, that though not generalizable may be used to help inform scalable interventions that appeal to clients and providers alike.

Limitations

Limitations of this study include the use of self-reported data and its cross-sectional design; longitudinal data will be necessary to predict the long-term impact of training, job satisfaction, and staff collaboration in the inclusion of multiple HIV prevention strategies in practice. It will be particularly useful to document when, where, and how (i.e., in what format) providers receive their trainings, so as to determine the ideal structure and setting for each specific type of training. Future research should use survey measures to tap specific areas of job satisfaction (e.g., salary, work conditions, etc.) and staff collaboration (e.g., referral making, program evaluation, etc.). Qualitative methods will be useful for uncovering variables that might help explain complex associations between training in different areas of substance-use treatment and inclusion of HIV strategies. Although there is always room for improvement, providers in our sample provided the four HIV prevention strategies in question at reasonably high percentages. However; 22% of them did not perform any of the strategies. We contend that those providers might be offering strategies other than those we explored here, for example, the more structured CDC Effective Behavioral Interventions. Further research focused specifically on these providers is recommended along with research about the role of within-agency leadership support for different types of HIV prevention strategies.

Another limitation is the unit of analysis, which looks at the provider and not the broader organizational context, though clustering of providers within agencies is controlled. By focusing on the provider these analyses may give the impression that providers who are employed within agencies are autonomous. We acknowledge that mandates regarding provider practices as well as organizational norms and expectations are indeed influential upon whether providers adopt HIV prevention strategies. However, according to our combined extensive experience as service providers, scholars, and supervisors, we are aware that much of individual and group counseling practice is left to the discretion of the provider himself or herself. Treatment planning, case conferences, and supervision are areas where the provider may assert his or her professional

opinions and clinical judgment. Therefore, despite the clear importance of organizational factors, we maintain that individual provider factors are fundamentally worthy of analysis and focus. In addition to provider factors, we do not currently have data on which services clients prefer and/or request. These data would be useful to help determine the factors which may contribute to how providers determine which services to offer. Lastly, selection bias may be of concern in this nonrandom sample.

Conclusion

This study suggests that many providers working with substance-using clients are actively performing risk-reduction counseling, sexual risk assessments, condom demonstration, and making referrals to HIV testing; a sizeable proportion of them also combine two or more strategies. Our unique findings show that being trained in more EBPs and service modalities was associated with higher odds of performing discrete HIV prevention strategies; more EBP training was also associated with increased inclusion of two or more HIV prevention strategies. Staff collaboration and job satisfaction were associated with the use of multiple HIV prevention strategies. To our knowledge, this is the first study showing EBP training along with collaboration and satisfaction as significantly influencing providers to include multiple HIV prevention strategies in practice. This combined evidence suggests that, to include multiple HIV prevention strategies with substance-using clients, providers ought to be trained in a variety of EBPs and service modalities; and HIV services agencies should attend to ways to promote collaborative and supportive environments that promote job satisfaction.

To encourage inclusion of HIV prevention with substance-using clients, we recommend that providers be routinely trained by using pedagogies—such as coaching, supervision, practice with feedback, and web-based methods—with potential to bolster collaboration and job satisfaction (Beidas & Kendall, 2010; Weingardt, Villafranca, & Levin, 2006). Academic programs in social work, counseling, or psychology offer limited, general HIV-related courses, often as electives (Shelby, Aronstein, & Thompson, 2014). Providers seldom receive training prior to entering clinical practice. Once they are situated in clinical settings, the quality of their training may vary widely. Therefore, in-agency training may help with inclusion of multiple HIV prevention strategies, which is known to help decrease risk of transmission and improve clients' protective behaviors. We also recommend that policy makers identify sources of low cost or free training (e.g., CDC and Substance Abuse and Mental Health Services Administration) that may lead to even more inclusion of HIV prevention and thus to better public health. Reaching a vulnerable population at an opportune moment, when behavior change is sought, providers can help decrease HIV infection and transmission among their substance-using clients.

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